

## CHECKLIST ENVIRONMENTAL ASSESSMENT

<b>Project Name:</b>	Phillips 66 Seminole Pipeline HDD Easement
<b>Proposed Implementation Date:</b>	August/September 2012
<b>Proponent:</b>	Phillips 66 Pipeline LLC
<b>Location:</b>	Section 25, Township 5 South, Range 31 East (Bighorn River – Public Land Trust)
<b>County:</b>	Big Horn County

### I. TYPE AND PURPOSE OF ACTION

Phillips 66 Pipeline LLC (Phillips 66) is proposing to install a new segment of the Seminole Pipeline which consists of an 8-inch diameter petroleum pipeline located underneath the navigable riverbed of the Bighorn River in Section 25-T5S-R31E in Big Horn County in a new 30' wide easement encompassing  $\pm 0.94$  acres. This new pipeline will be installed by Horizontal Directional Drilling (HDD) and be located approximately 28' below the river bed and replace an existing pipeline that is located approximately 15' upstream of the new pipeline. According to the 310 application, the cover of the pipeline has been *"...reduced to where the top of the pipe is exposed or nearly exposed in the thalweg of the channel depending upon flow. With additional high water, the potential exists that the pipe could be further exposed and potentially suspended. If the pipe were to become further exposed and suspended, the potential exists for debris to hang up on the pipe during high water with the potential for damage."*

Additional alternatives to the installation of a new pipeline via HDD were: rerouting the pipeline (this option would still require a river crossing at some location); new open cut trench crossing; temporary stabilization; or no action. All of these alternatives were considered and ultimately removed from consideration due to impacts that they would cause that would be greater than that of the HDD option.

The applicant has proposed that the old pipeline be allowed to be abandoned in place. The pipe section would be *"...purged and swabbed then the line grouted with a weak one-sack flowable sand/cement mixture and the ends capped."* It is also noted by the applicant that *"... over time without cathodic protection the pipe will eventually degrade and the flowable fill become part of the valley fill that the pipe is buried in."* Also, removal of the pipeline would cause disturbance to the river bed and increase downstream sedimentation. If the pipe were abandoned in place, Phillips would continue to monitor *"...for potential exposure. If exposure of the abandoned section occurs in the future, alternatives will be assessed at that time."* However, the risk of abandoning in place is that the pipeline could become further exposed and ultimately suspended. If this happens it is possible that debris or some other object, like a drift boat anchor, could snag the old pipeline which could require the river to be closed while the old pipeline removed. If the river had to be closed during a heavy use period of the fishing season, it would have an adverse economic impact on businesses that rely on the fisherman and other river users. The Southern Land Office (SLO) is recommending that the Land Board require the old pipeline be removed between January-March 2013. This is during low flow of the river and also when the river has the least amount of traffic. Being proactive in removal of the line would allow the State to be in control of when it is removed and not wait on nature. The SLO also consulted the FWP Biologist for Big Horn County and he also recommended removing all or a portion of the abandoned pipeline. The removal of the old pipeline would require a separate Land Use License and an additional environmental review document.

The Bighorn River has been adjudicated through Montana v U.S. (1981) which found that the state owns the entire length of the riverbed from Wyoming to its confluence with the Yellowstone River even though it is located within the boundaries of the Crow Tribe Reservation. The existing pipeline does not have an easement from the State based on both DNRC and Phillips 66 records. In addition, there is a landform in Sections 25 and 36 that shows State ownership in Department of Revenue parcel data. The DNRC performed research on this landform and it is very likely that it is indeed owned by the State, as it appears to be an island that was located between the main channel and a high water channel of the river. The installation of Yellowtail Dam upstream of this location could account for the lack of flow in this former channel. This landform will also serve as the HDD exit point and Phillips 66 has voluntarily elected to include this area within their easement application.

The Horizontal Directional Drilling (HDD) will utilize an entry point on the northwest side of the Bighorn River on private property owned by Grapevine Ranch and an exit on the southeast side on the landform mentioned above that is likely owned by the State. The HDD technique will allow the new pipeline to be located at an increased depth and decrease surface disturbance. Additionally, it will minimize areas of open-cut trenching to areas above the high water mark that connect the new pipeline segment to the existing facility.

## II. PROJECT DEVELOPMENT

### 1. PUBLIC INVOLVEMENT, AGENCIES, GROUPS OR INDIVIDUALS CONTACTED:

*Provide a brief chronology of the scoping and ongoing involvement for this project.*

The DNRC did not perform any formal public scoping for this project. However, the SLO did contact Montana Fish, Wildlife and Parks to get their opinion on whether the old pipeline should be abandoned in place or removed. Additionally, the SLO spoke with Dennis Fischer who is a member of the Bighorn River Alliance and has previously worked with the SLO on restoring side channels in the Bighorn River for fisheries habitat.

### 2. OTHER GOVERNMENTAL AGENCIES WITH JURISDICTION, LIST OF PERMITS NEEDED:

Big Horn Conservation District: 310 Permit (Issued)  
US Army Corps of Engineers: Section 404 Permit (Waived)

### 3. ALTERNATIVES CONSIDERED:

**No Action Alternative:** Deny the request to issue an easement to permit the installation of a new segment of the Seminole crude oil pipeline under the bed of the Bighorn River.

**Proposed Alternative:** Approve the request to issue an easement to permit the installation of a new 8-inch pipeline under the bed of the Bighorn River through the use of Horizontal Directional Drilling (HDD). Utilization of the HDD method would permit the pipeline to be installed approximately 28' beneath the riverbed. Additionally, the old pipe would be required to be removed from the river bed at a later date.

## III. IMPACTS ON THE PHYSICAL ENVIRONMENT

- *RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.*
- *Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.*
- *Enter "NONE" if no impacts are identified or the resource is not present.*

### 4. GEOLOGY AND SOIL QUALITY, STABILITY AND MOISTURE:

*Consider the presence of fragile, compactable or unstable soils. Identify unusual geologic features. Specify any special reclamation considerations. Identify any cumulative impacts to soils.*

The proposed alternative would permit the use of Horizontal Directional Drilling (HDD) to install a new segment of pipeline approximately 28' below the existing bed of the Bighorn River. Implementation of this alternative would require a 250'x200' HDD entry pad on the northwest side of the river on property owned by Grapevine Ranch. It would also require the location of a 145'x300' HDD exit point work pad on the southeast side of the river on the landform that is likely owned by the State. There would also be a pipe laydown area on this landform extending beyond the exit point that would be approximately 25' wide by 800' long.

The proposed alternative would not disturb any surface area under the Bighorn River, as the new pipeline will be bored underneath it. The alternative will disturb ground on the landform on the east side of the river that is likely owned by the State. The disturbance will include the exit point of the HDD operation, connecting the new line to the existing line on the shore and a pipe laydown area where the new pipe will be pulled through the bore hole that is created by the HDD and minor improvements to a 2-track trail for vehicles and equipment to access the southeast side of the river.

No significant adverse impacts are expected to geology and soil quality by implementing the proposed alternative.

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## **5. WATER QUALITY, QUANTITY AND DISTRIBUTION:**

*Identify important surface or groundwater resources. Consider the potential for violation of ambient water quality standards, drinking water maximum contaminant levels, or degradation of water quality. Identify cumulative effects to water resources.*

The proposed alternative would allow for the new pipeline segment to be installed via Horizontal Directional Drilling (HDD). The use of HDD would limit the adverse impacts to water quality and quantity by allowing for the facility to be located at least 28 feet below the bed of the Bighorn River and provide additional protection for the pipeline from scouring of the river bottom. The pipe is proposed to enter the ground approximately 280 feet northwest of the west river bank and exit 270 feet southeast of the east bank. The 310 application states that any water needed for the HDD operation will be obtained either from the Crow Tribe or by purchase from Fort Smith or St. Xavier.

Short term impacts from the construction/drilling operation are not expected to have significant adverse impacts. Phillips 66 will be required to follow Montana Best Management Practices (BMP) for stormwater runoff, as well as permitting requirements from the Montana Department of Environmental Quality. This would include installing erosion control and sediment control devices to prevent topsoil from reaching the river.

The Southern Land Office is recommending that the existing pipe be removed from under the river bed rather than abandoned in place. If the Land Board concurs and requires its removal, a Land Use License will be required as well as a separate environmental review.

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## **6. AIR QUALITY:**

*What pollutants or particulate would be produced? Identify air quality regulations or zones (e.g. Class I air shed) the project would influence. Identify cumulative effects to air quality.*

The proposed alternative would require the operation of construction machinery including but not limited to a HDD drill rig, trackhoe and miscellaneous support trucks, including a water truck. Not all machinery would be operating at the same time and it would be limited to 12 hour work days. The entire project is expected to last approximately 6-7 weeks, with the actual HDD process taking about 2 weeks of that timeframe. The proposed alternative would utilize an existing 2-track trail and some improvements to the road may be necessary, such as adding fabric and gravel to soft spots. The proposed alternative would be of a relatively short duration and would not be expected to have significant long term adverse impacts to air quality.

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## **7. VEGETATION COVER, QUANTITY AND QUALITY:**

*What changes would the action cause to vegetative communities? Consider rare plants or cover types that would be affected. Identify cumulative effects to vegetation.*

Implementation of the proposed alternative would require a 250'x200' HDD entry pad on the northwest side of the river on property owned by Grapevine Ranch. It would also require the location of a 145'x300' HDD exit point work pad on the southeast side of the river on the landform that is likely owned by the State. There would also be a pipe laydown area on this landform beyond the exit point that would be approximately 25' wide by 800' long. These impacts would create short term, localized impacts to vegetative cover. After work activities are completed, areas that were disturbed will be returned to their previous use and in the case of vegetative areas, be reseeded with a native seed mix. There will be no disturbance to the riverbed through the implementation of the proposed alternative. However, if the Land Board requires removal of the existing pipe that is under the river bed, there will be disturbance that would be analyzed under a separate environmental review. No significant impacts to vegetation cover, quantity or quality are expected by implementing the proposed alternative.

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## 8. TERRESTRIAL, AVIAN AND AQUATIC LIFE AND HABITATS:

*Consider substantial habitat values and use of the area by wildlife, birds or fish. Identify cumulative effects to fish and wildlife.*

A variety of big game, small mammals, raptors and songbirds may traverse this area. Additionally, the Bighorn River is one of the premier trout fisheries in Montana. The noise from the drill rig could disperse or cause wildlife to temporarily avoid the area. The implementation of the project is proposed for August-September 2012 and this time of year will not cause disturbance to nesting activities, especially Bald Eagles. No significant impacts to terrestrial, avian and aquatic life and habitats are expected to occur as a result of implementing the proposed alternative.

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## 9. UNIQUE, ENDANGERED, FRAGILE OR LIMITED ENVIRONMENTAL RESOURCES:

*Consider any federally listed threatened or endangered species or habitat identified in the project area. Determine effects to wetlands. Consider Sensitive Species or Species of special concern. Identify cumulative effects to these species and their habitat.*

A proposed project area search of the Montana Natural Heritage Program database identified four vertebrate animals listed as a species of concern or threatened species: Bald Eagle, Great Blue Heron, Sauger, and Spotted Bat.

**Bald eagles** are listed as a species of concern and are known to populate areas along the Bighorn River. Due to the short duration and time of year of the proposed project activities, no significant impacts are anticipated.

**Great Blue Heron** is listed as a species of concern. The Montana Field Guide discusses reproductive timeframes and the proposed project would not interfere with hatching or fledging, if there are any nearby nests. Therefore, no significant impacts are anticipated.

**Sauger** is listed as a species of concern. The proposed project will bore under the Bighorn River and not cause any physical disturbance. No significant impacts are anticipated.

**Spotted Bat** is listed as a species of concern. The area primarily south/southwest of the subject site has more cliffs and outcroppings that would constitute their preferred habitat. The Spotted Bat could traverse or forage through the subject site, but the topography would not seem to support any preferred roost sites. Due to the short duration of the proposed project activities, no significant impacts are anticipated.

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## 10. HISTORICAL AND ARCHAEOLOGICAL SITES:

*Identify and determine effects to historical, archaeological or paleontological resources.*

The portion of the pipeline that is under adjudicated state ownership will be 28' below the river bed. The Southern Land Office Land Use Specialist and Land Use Planner conducted a visual survey on a portion of the potential state-owned landform and did not note any cultural features. No significant adverse impact to historic and archaeological sites on state-owned land is expected as a result of implementing the proposed alternative.

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## 11. AESTHETICS:

*Determine if the project is located on a prominent topographic feature, or may be visible from populated or scenic areas. What level of noise, light or visual change would be produced? Identify cumulative effects to aesthetics.*

The proposed action is located on a fairly remote section of the Bighorn River generally located between the Three Mile and Bighorn Fishing Access Sites, approximately 5 miles northeast of Fort Smith. The northwest bank where the HDD entry point is currently proposed is shielded from the river by trees and is located approximately 280' from the river bank. The exit point on the southeast bank is somewhat visible from the river, but is obscured by a relatively high bank and will be approximately 250' from the river. Once the new segment is constructed, the only visible evidence from the river will be above ground warning/safety markers. There is also a control valve that is on the southeast bank, approximately 370' from the river, but it is not visible from the river.

The impact that will be most noticeable to users on the Bighorn River will be the noise from the HDD drill rig and other heavy equipment. Based on previous HDD requests, it is estimated that the noise levels at the Bighorn River will be between 65-70 dBA. This level is loud enough that it could impact speech for boaters and anglers on this reach of the river. The closest residence is approximately 0.6 miles from the HDD exit point and the noise should be below 55 dBA, which is an acceptable level set by the EPA so that it does not interfere with sleep or speech in residential areas.

Implementation of the Proposed Alternative would cause minor temporary short term impacts to aesthetics during the pipeline construction with the main impact being sound from the HDD drill rig and other heavy equipment. The actual HDD process is expected to take approximately 2 weeks and the entire project about 6-7 weeks. A typical work day for this project would be 12 hours, potentially seven days a week, for the duration of the project. The proposed action would add to the existing low-level noise levels, but this short term addition is not expected to cause a significant adverse impact.

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**12. DEMANDS ON ENVIRONMENTAL RESOURCES OF LAND, WATER, AIR OR ENERGY:**

*Determine the amount of limited resources the project would require. Identify other activities nearby that the project would affect. Identify cumulative effects to environmental resources.*

Implementation of the Proposed Alternative is not expected to have a significant adverse impact on environmental resources of land, water or energy.

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**13. OTHER ENVIRONMENTAL DOCUMENTS PERTINENT TO THE AREA:**

*List other studies, plans or projects on this tract. Determine cumulative impacts likely to occur as a result of current private, state or federal actions in the analysis area, and from future proposed state actions in the analysis area that are under MEPA review (scoped) or permitting review by any state agency.*

Other permits that are required by other local, state or federal agencies or departments for the proposed project are listed above in Section 2 of this EA.

There are no other definite known future government actions planned for this Public Land Trust property. However, the Southern Land Office is recommending to the Land Board that the existing pipe be removed from the river bed of the Bighorn River as it is currently exposed or nearly exposed. If this action is required, it would need to go through the Joint Application process (310 permit) and each agency would perform any required environmental review prior to the issuance of any permits.

<b>IV. IMPACTS ON THE HUMAN POPULATION</b>
<ul style="list-style-type: none"><li>• <i>RESOURCES potentially impacted are listed on the form, followed by common issues that would be considered.</i></li><li>• <i>Explain POTENTIAL IMPACTS AND MITIGATIONS following each resource heading.</i></li><li>• <i>Enter "NONE" if no impacts are identified or the resource is not present.</i></li></ul>



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**14. HUMAN HEALTH AND SAFETY:**

*Identify any health and safety risks posed by the project.*

Implementation of the Proposed Alternative would provide for increased health and safety by taking a pipeline that is currently exposed out of service before there is an incident that would cause an oil spill in this premier Montana trout fishery.

The Southern Land Office is also recommending that the existing pipe be required to be removed sometime between January-March 2013. This would allow Phillips 66 time to plan the pipeline extrication. Additionally, it would be timing it during low flow of the Bighorn River, as well as, when there are the fewest users on the river that would be impacted. If the old pipeline is allowed to be abandoned in place, there is a potential that it will become more exposed and potentially suspended. This would make it more probable that the pipe could catch a piece of debris or get inadvertently snagged by an anchor from a drift boat. This section of the river receives very heavy use in the spring through fall and requiring the removal of the pipeline in early 2013 would allow the DNRC and Land Board to determine when the extrication happens and not wait for an incident at some point in the future that could close the river during a busy time of year while the old pipe is removed.

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**15. INDUSTRIAL, COMMERCIAL AND AGRICULTURE ACTIVITIES AND PRODUCTION:**

*Identify how the project would add to or alter these activities.*

Implementation of the Proposed Alternative would allow for the Seminole pipeline to continue to be fully operational once the HDD is complete and the new segment is installed. If a new segment is not installed and the pipeline becomes more exposed, the US DOT PHMSA could require that it be shut down so that there is not a release of petroleum into the Bighorn River.

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**16. QUANTITY AND DISTRIBUTION OF EMPLOYMENT:**

*Estimate the number of jobs the project would create, move or eliminate. Identify cumulative effects to the employment market.*

Implementation of the Proposed Alternative would not have a significant impact to quantity and distribution of employment.

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**17. LOCAL AND STATE TAX BASE AND TAX REVENUES:**

*Estimate tax revenue the project would create or eliminate. Identify cumulative effects to taxes and revenue.*

Implementation of the Proposed Alternative is not expected to have a significant impact on local and state taxes since it would only replace an existing segment of the Seminole Pipeline.

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**18. DEMAND FOR GOVERNMENT SERVICES:**

*Estimate increases in traffic and changes to traffic patterns. What changes would be needed to fire protection, police, schools, etc.? Identify cumulative effects of this and other projects on government services*

Implementation of the Proposed Alternative is not expected to have a significant adverse impact on the demand for government services.

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**19. LOCALLY ADOPTED ENVIRONMENTAL PLANS AND GOALS:**

*List State, County, City, USFS, BLM, Tribal, and other zoning or management plans, and identify how they would affect this project.*

Implementation of the Proposed Alternative is not expected to conflict with any locally adopted plans.

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**20. ACCESS TO AND QUALITY OF RECREATIONAL AND WILDERNESS ACTIVITIES:**

*Identify any wilderness or recreational areas nearby or access routes through this tract. Determine the effects of the project on recreational potential within the tract. Identify cumulative effects to recreational and wilderness activities.*

This section of the Bighorn River is very heavily used, especially by fly fisherman as it is one of the premier trout fisheries in the state. The Horizontal Directional Drilling (HDD) will not have a direct impact on the use of the river, with the exception of increased noise during the duration of the project, approximately 6-7 weeks.

The applicant has proposed that the old pipeline be allowed to be abandoned in place. The pipe section would be "...purged and swabbed then the line grouted with a weak one-sack flowable sand/cement mixture and the ends capped." It is also noted by the applicant that "... over time without cathodic protection the pipe will eventually degrade and the flowable fill become part of the valley fill that the pipe is buried in." Also, removal of the pipeline would cause disturbance to the river bed and increase downstream sedimentation. If the pipe were abandoned in place, Phillips would continue to monitor "...for potential exposure. If exposure of the abandoned section occurs in the future, alternatives will be assessed at that time."

However, the risk of abandoning in place is that the pipeline could become further exposed and ultimately suspended. If this happens it is possible that debris or some other object, like a drift boat anchor, could snag the old pipeline which could require the river to be closed while the old pipeline removed. If the river had to be closed during a heavy use period of the fishing season, it would have an adverse economic impact on

businesses that rely on the fisherman and other river users. The Southern Land Office (SLO) is recommending that the Land Board require the old pipeline be removed between January-March 2013. This is during low flow of the river and also when the river has the least amount of traffic. Being proactive in removal of the line would allow the State to be in control of when it is removed and not wait on nature.

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**21. DENSITY AND DISTRIBUTION OF POPULATION AND HOUSING:**

*Estimate population changes and additional housing the project would require. Identify cumulative effects to population and housing.*

Implementation of the Proposed Alternative is not expected to have a significant adverse impact to density and distribution of population and housing.

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**22. SOCIAL STRUCTURES AND MORES:**

*Identify potential disruption of native or traditional lifestyles or communities.*

Implementation of the Proposed Alternative is not expected to have a significant adverse impact on social structures and mores.

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**23. CULTURAL UNIQUENESS AND DIVERSITY:**

*How would the action affect any unique quality of the area?*

Implementation of the Proposed Alternative is not expected to have a significant adverse impact on cultural uniqueness or diversity.

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**24. OTHER APPROPRIATE SOCIAL AND ECONOMIC CIRCUMSTANCES:**

*Estimate the return to the trust. Include appropriate economic analysis. Identify potential future uses for the analysis area other than existing management. Identify cumulative economic and social effects likely to occur as a result of the proposed action.*

The State will benefit by getting a one-time fee for the easement, as well as a \$50 application fee. The Public Lands Trust is the beneficiary of this payment since it involves a navigable river.

<b>EA Checklist Prepared By:</b>	<b>Name:</b> Jeff Bollman, AICP	<b>Date:</b> 25 July 2012
	<b>Title:</b> Area Planner, Southern Land Office	

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<b>V. FINDING</b>
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**25. ALTERNATIVE SELECTED:**

The Proposed Alternative has been selected and it is recommended that an easement be granted to Phillips 66 for the purpose of installing an 8-inch diameter petroleum pipeline underneath the navigable riverbed of the Bighorn River to replace a portion of the Seminole Pipeline. This new pipeline segment will be installed by Horizontal Directional Drilling (HDD) and be located approximately 28' below the river bed and approximately 15' downstream of the old pipeline. According to the 310 application, the cover of the pipeline has been "...reduced to where the top of the pipe is exposed or nearly exposed in the thalweg of the channel depending upon flow. With additional high water, the potential exists that the pipe could be further exposed and potentially suspended. If the pipe were to become further exposed and suspended, the potential exists for debris to hang up on the pipe during high water with the potential for damage." This Alternative also allows for the pipeline to be installed in a manner that does not cause any disturbance to the riverbed surface.

Additionally, it is recommended that the Land Board require Phillips 66 to remove the old pipeline. The applicant has proposed that the old pipeline be allowed to be abandoned in place. The pipe section would be "...purged and swabbed then the line grouted with a weak one-sack flowable sand/cement mixture and the ends capped."

It is also noted by the applicant that “... over time without cathodic protection the pipe will eventually degrade and the flowable fill become part of the valley fill that the pipe is buried in.” Also, removal of the pipeline would cause disturbance to the river bed and increase downstream sedimentation. If the pipe were abandoned in place, Phillips would continue to monitor “...for potential exposure. If exposure of the abandoned section occurs in the future, alternatives will be assessed at that time.”

However, the risk of abandoning in place is that the pipeline could become further exposed and ultimately suspended. If this happens it is possible that debris or some other object, like a drift boat anchor, could snag the old pipeline which could require the river to be closed while the old pipeline removed. If the river had to be closed during a heavy use period of the fishing season, it would have an adverse economic impact on businesses that rely on the fisherman and other river users. The Southern Land Office (SLO) is recommending that the Land Board require the old pipeline be removed between January-March 2013. This is during low flow of the river and also when the river has the least amount of traffic. Being proactive in removal of the line would allow the State to be in control of when it is removed and not wait on nature.

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## 26. SIGNIFICANCE OF POTENTIAL IMPACTS:

The potential for significant adverse impacts to Public Trust Lands (the navigable riverbed) are reduced by the nature of the Horizontal Directional Drilling technique that will be utilized and the depth (28' minimum) beneath the existing riverbed that will be achieved. Many potential impacts listed above are short term and correspond with the construction project. There are no natural features or nearby species of concern noted that are expected to produce long term adverse impacts from the proposed alternative.

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## 27. NEED FOR FURTHER ENVIRONMENTAL ANALYSIS:

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EIS

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More Detailed EA

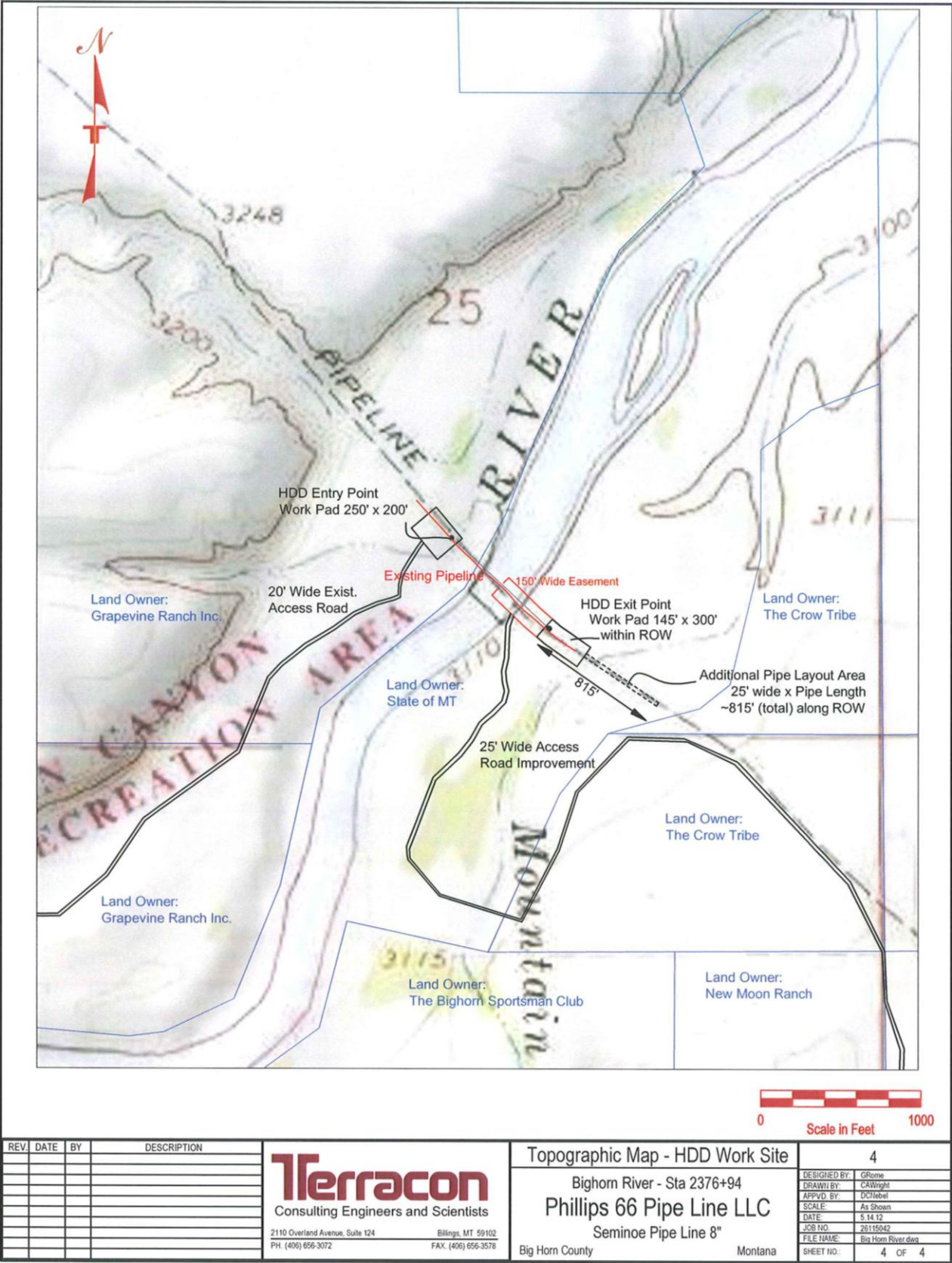
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No Further Analysis

<b>EA Checklist Approved By:</b>	<b>Name:</b>	Matthew Wolcott
	<b>Title:</b>	Area Manager, Southern Land Office
<b>Signature:</b> /s/ Matthew Wolcott		<b>Date:</b> July 25, 2012



Attachment A – Location Map of Proposed Seminole Pipeline Replacement Project



**Attachment B – Photo Showing View across Bighorn River at Pipeline Crossing Location**





PHOTO LOOKING DOWNSTREAM FROM EAST TO WEST AT THE BIG HORN RIVER. NEAR EXPOSURE IS BENEATH THE WATER SURFACE.

**SECTIONAL VIEW LOOKING DOWNSTREAM AT CROSSING**

**Total Horizontal HDD Length: 807 feet**  
**Total Pipe Length: 815 feet**

**Site Detail - Potential HDD Crossing**

Big Horn River - Sta 2376+94

**Phillips 66 Pipeline LLC**

Seminole Pipeline 8"

Big Horn County

**Terracon**

Consulting Engineers and Scientists

2110 Overland Avenue, Suite 124  
 Billings, MT 59102  
 PH: (406) 658-3072 FAX: (406) 658-3878

REV	DATE	BY	DESCRIPTION
1	10/20/12	ESS	Profile changes to 802mils, 10' offset

DESIGNED BY	DESIGNED	APPROVED BY	APPROVED	DATE	SCALE	FILE NAME	SHEET NO.
DOUGLAS	DOUGLAS	DOUGLAS	DOUGLAS	Aug 2012	As Shown	HDD BHR ROW 12m offset	2 OF 3

2,891'

30' Wide Easement  
Centerline Approx. 1,325 linear feet

50'x50' Easement  
at Block Valve

Section Line

3,717'

FLOW

Found 1/4 Section Marker

Approximate Crossing Location:  
N: 45° 21' 44.01"  
W: 107° 49' 7.95" (NAD83)

1,000 ft

**Terracon**  
Consulting Engineers and Scientists  
2110 Overland Avenue, Suite 124  
Billings, MT 59102  
PH: (406) 658-3072 FAX: (406) 658-3378

**Easement - Potential HDD Crossing**  
Bighorn River - Sta 2376+94  
Phillips 66 Pipeline LLC  
Seminole Pipeline 8"  
Big Horn County Montana

REV	DATE	BY	DESCRIPTION
1	6/22/2012	BESS	Profile changed by 20' and 32' 15" offset

DESIGNED BY: DONAH	3
DRAWN BY: CANNON	
CHECKED BY: JAY SHAW	
SCALE: AS SHOWN	
DATE: May 2012	
JOB NO: 28110042	
PROJECT NO: 1501001010101010	
SHEET NO: 3	3 OF 3

The new easement centerline starts at a point located 3,717 feet north and 2,891 feet east of the recorded corner described as East 1/4 Corner Sec. 35, Township 5 South, Range 31 East, Big Horn County. The centerline then extends approximately 1,325 feet in the direction of East 43° South following the centerline of the pipe line. The proposed easement is 30 feet in width, with a 15 foot offset on either side of the centerline, resulting in a total area of approximately 0.94 acres. This total area does include an allowance for a 50 foot by 50 foot easement area at the block valve located upland of the east river bank.